

MULTIMODE AND MULTIBAND MIMO TRANSCEIVER OF  
W-CDMA, WLAN AND UWB COMMUNICATIONS

Abstract of the Disclosure

A multimode and multiband MIMO transceiver of W-CDMA, WLAN and UWB communication is disclosed. The transceiver  
5 uses four antennas at the transmitter and the receiver as a MIMO link. The W-CDMA has a multicarrier for 12 channels with a total of 15-MHz frequency bandwidth and is able to transmit the data rate more than 2 Mbps. The WLAN can transmit and receive a data rate up to 54 Mbps based on  
10 OFDM technology. On the other hand, the UWB communication uses an OFDM-based multicarrier for four-multiband, with each multiband of frequency bandwidth about 512 MHz, and is able to transmit a very high data rate of more than 1 Gbps. Thus, the multimode and multiband MIMO transceiver of W-  
15 CDMA, WLAN and UWB communication is enable a user to have internet surf, to listen MP3 music, to watch DVD, to play video game, to view stock graph, to transmit data in a real-time operation. This multimode and multiband MIMO transceiver utilizes a trade-off benefit of W-CDMA, WLAN  
20 and UWB, thereby having a co-existence of multi-standard for applications in a wireless and fixed wireless communication environment.